Primary Customers

Forestry Credit Offsets (FCOs) Project Developers

- 1. Original Target: FCO project developers in the state of Acre in Brazil under the SISA (Sistema de Incentivo aos Serviços Ambientais—System of incentives to Ecosystem Services), focused on developing carbon credits to be sold on the future California compliance market under AB-32.
- 2. Present Target: Brazilian FCO project developers focused on ongoing voluntary and pre-compliance markets.

What Are Carbon Offsets?

Offsets are instruments of economic flexibility in achieving compliance with emission reductions. They allow investment in emission reduction

- elsewhere and can be used to meet up to 8% of reduction targets. There are four offset protocols accepted under AB-32:
- U.S. Forest Projects Reforestation, improved forest management, and avoided forest conversion¹
- Livestock Projects Projects for capture and destruction of methane gas from livestock management² • Ozone Depleting Substances Projects Projects for destruction of ozone depleting substances³
- Urban Forest Projects Projects for tree planting and maintenance activities in urban areas⁴

The next protocol expected to be accepted under the California market is for FCOs from REDD projects.

Forestry Credit Offsets (FCOs)

Within the types of offsets already accepted under AB-32, Forestry Credit Offsets, or FCOs, should be accepted in the second compliance period,

- and will originate from the UN-REDD Protocol. FCOs are considered to be:
- The lowest cost to achieve carbon reductions
- Address the highest source of carbon emission in the world Present the highest social and environmental co-benefits
- Are the most marketable, charismatic type of carbon credit, with the highest image gain for investors.

Environmental benefits:

Large-scale preservation of biomass carbon stocks and tropical biodiversity. Poverty alleviation by providing economic alternatives to forest dwellers and indigenous people.

Cap-and-Trade

Cap-and-trade, or emissions trading, is a market-based mechanism to address environmental problems.

- Regulators identify the regulated entities.
- Regulators determine an emissions cap.
- Allows trading between companies below the cap with the ones above the cap.

The system brings economic efficiency to emission reductions, allocating investment towards the lowest cost of reductions.

What is REDD?

Reducing Emissions from Deforestation and Forest Degradation (REDD) is a United Nations protocol, designed to finance forest protection through the sale of carbon credits to compliance and voluntary carbon markets. The financial estimates, revenues, costs, as well as monitoring and maintenance expense models are not yet fully developed. The fair sharing of its economic benefits is another topic of concern. REDD is expected to develop intensely in the short term, which is vital considering that tropical forest deforestation is the largest source of carbon emissions globally.



Legal Framework

California Global Warming Solution Act: AB-32

AB-32 is a California state law created to address climate change, which will be implemented through a cap-and-trade system. GHGs emissions are to be reduced to 1990 levels by 2020, representing a 25% reduction with mandatory caps beginning in 2013 for significant emissions sources. The cap-and-trade system is designed to link to other states and jurisdictions, with the goal of becoming a center for carbon trading.

Regulations originally created to address air pollution such as the Clean Air Act (CAA), the National Environmental Protection Act (NEPA) and the California Environmental Quality Act (CEQA) are being amended to regulate GHG emissions. Such regulations will require purchase of offsets, which will be done through the AB-32 trading platform.

Other Emissions Trading Programs

- The Acid Rain Program
- The NOx Budget Program
- The Regional Clean Air Incentives Market (RECLAIM)
- Regional Greenhouse Gas Initiative (REGGI)
- European Union Emissions Trading Scheme under the Kyoto Protocol

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Christian Wiesenthal and Harry Vickers



Selling Forestry Carbon Offsets (FCOs) to the Voluntary and Compliance Markets. Marketing and brokering agency, focused on selling FCOs and their co-benefits.

> "Building a know-how based bridge between buyers and sellers of forestry carbon offsets"

Customer Problem

Trading of FCOs represents an international transaction of a environmental asset with great level of risk and uncertainty related to origin, quality, certification processes, carbon accounting, monitoring, verification, permanence of carbon stocks and validity as compliance instrument for emission reduction requirements.

Environmental Problem

The environmental problem generating the opportunity explored by Green Carbon is anthropogenic climate change. Market-based mechanisms such as cap-and-trade have been developed to address this issue.

How to Deal with the Problem? Imposing a Price on GHGs Emissions.

- There are three ways to price carbon: Prescriptive regulation
- Taxation Cap-and-trade or emissions trading

Due to Assembly Bill 32 (AB-32), in California a cap-and-trade system is being developed. Emission allowances will be auctioned on a yearly basis, and a portion of emissions could be compensated through carbon offsets.

> Green Carbon developed a deep know-how of all aspects of the transaction, aimed at bringing security to the trading of such risky asset.

Conclusion

The Original Hypothesis

The original hypothesis for Green Carbon was to trade FCOs between Brazilian project developers from the Amazonian state of Acre and Californian buyers under AB-32.

Customer Pain Identified

Green Carbon identified a great level of uncertainty in the purchase of FCOs, since it represented an international transaction involving an environmental asset. The building of a know-how based bridge between buyers and sellers of FCOs was directed at solving the uncertainty and reducing risk.

The Current Status of the Market

As policy under AB-32 developed, it became clear that regulators identified and focused on solving the original customer pain that Green Carbon identified. An online trading platform was created to provide transparency and reliability in trading FCOs, specifically designed to reduce the need for any intermediaries, such as Green Carbon.

The Role of Brokers Under AB-32

Opportunities for brokerage under AB-32 are more related to speculation, long-term investment in purchasing FCOs and betting on future price increases. Green Carbon's latest market assessment indicated that the original business model would struggle under present market conditions, which is more appropriated for well-funded large companies. Nevertheless, the know-how acquired by Green Carbon during the development of the project remains very valuable in the marketplace of the growing emissions trading business.

Secondary Customers

Buyers of Carbon Credits in the U.S.

Compliance Buyers Entities regulated under AB-32, who would be interested in FCOs as a way to meet their legal obligation to reduce emissions.

Driver Legal Obligation.

Voluntary Buyers Companies or individuals willing to achieve full carbon neutrality, through purchase of carbon offsets such as FCOs. **Driver** Corporate Social Responsibility (CSR) public image and marketing goals, and pre-compliance purchases in order to gain familiarity with the developing market.



Market Opportunity

Green Carbon is focused in trading FCOs in the policy driven market under California's AB-32, as well as other legislation such as the Clean Air Act (CAA), the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA).

Market Size Assessment

Carbon Markets: An attractive, durable and timely opportunity!

	2008	2009		2010	
Forest offsets	11%	24%	(x 2,18)	45%	(x1,8
REDD	1%	7%	(x 7)	29%	(x4.1)
Total \$	728 million	387 million 98 Mt		424 million	
Total million Tons	127 Mt			131 Mt	

California Cap-and-trade Market \$10 billion by 2016.

Voluntary Market 2010 Over \$424 million from forestry carbon credits with expected growth.⁵

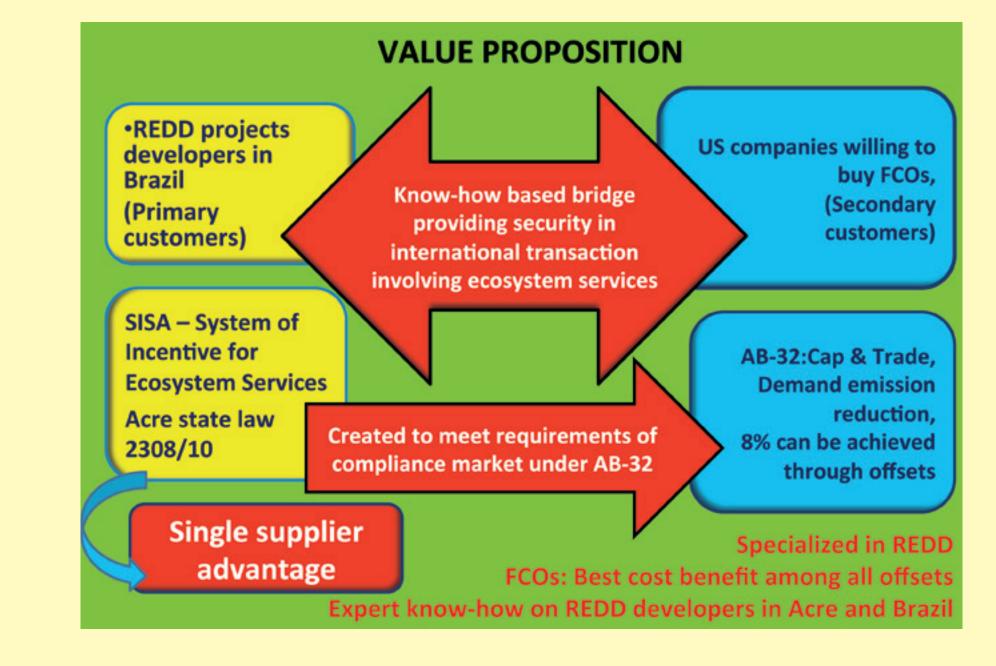
FCOs Price Range \$2.76 per ton and up to \$33.00 per ton, with an average of between \$6-8.6 Price projected to increase up to \$75 per ton by 2020.7

Business Concept

Green Carbon is a commission-based brokering and consultancy service for the trading of FCOs into the compliance and voluntary markets in the U.S.

Value Proposition Provide know-how and security in the FCO markets for project developers and buyers in the voluntary and compliance markets.

Competitive Advantage Green Carbon's team has top quality credentials in the science, policy, and economics of environmental markets such as carbon trading. The team has built valuable contacts in the UK, U.S. and Brazil with several players in the space.





Footnotes

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4 California Environmental Protection Agency – Air Resources Board, Compliance Offset Protocol Urban Fores Projects, (October 20, 2011). Available at www.arb.ca.gov/regact/2010/capandtrade10/copurbanforestfin.pdf 5 Kyoto Protocol is a binding agreement under the International Framework Convention for Climate Change (IFCCC). Available at http://unfccc.int/kyoto_protocol/items/2830.php

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